Mountain Plover (*Charadrius montanus*)

State Rank: S2B
Global Rank: G3

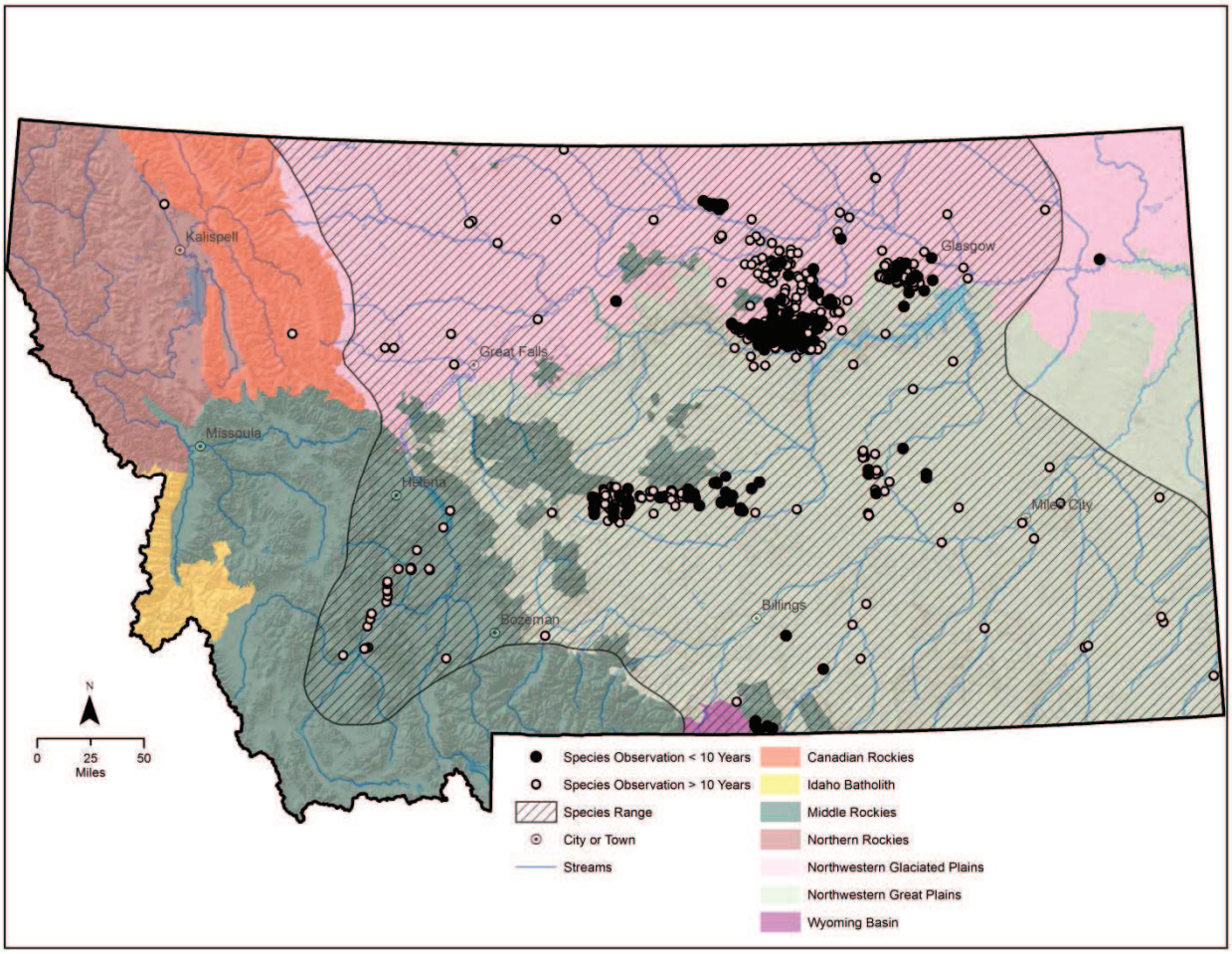

Figure 36. Montana range and observations of the mountain plover

Habitat

Habitat use in Montana appears similar to other areas within the species' global breeding range, i.e., use of prairie dog colonies are primarily used in Montana; however, other short-grass prairie sites are confirmed as preferred breeding habitat. Records indicate the species utilizes towns of both white-tailed (*Cynomys leucurus*) and black-tailed prairie dogs (*Cynomys ludoviscianus*). Prairie dog towns provide greater horizontal visibility, a higher percentage of bare ground, refugia for consumption, and a higher diversity of forbs than adjacent areas (Olsen 1985). Mountain plovers will use towns as small as 7.4 acres (Knowles et al. 1982); from 15 to 124 acres in another study (Olson-Edge and Edge 1987), and from 5 to more than 371 acres in another (Dinsmore 2001).

Primary habitat use in Montana during the breeding season includes heavily grazed, short-grass prairie sites. Habitat in Phillips and Blaine counties, the area containing the largest known populations of mountain plover in the state, is dominated by the native plant species *Bouteloua gracilis* and *Koeleria cristata.* This area also contains *Stipa comata*, *Agropyron smithii*, *Carex* spp., *Artemisia frigida*, *Opuntia polyacantha*, and *Gutierrezia sarothrae* (FaunaWest 1991).

Knowles and Knowles (1993) determined that in the northeastern portion of the state, mountain plover also selected sites associated with habitat dominated by *Atriplex gardneri* and *Eriogonum multiceps*, while use in the central and southwestern areas of the state was associated with *Bouteloua gracilis* and *Stipa comata*. Strong preference was also given to sites with slopes less than 5% and grass height of less than 3 inches (Knowles et al. 1995). Knowles and Knowles (1993) indicates that sites selected within these habitat types were restricted to areas intensively grazed by prairie dogs, sheep, and/or cattle, especially those of the *Stipa comata* and *Bouteloua gracilis* habitat type (Knowles and Knowles 1997).

Management

Only the BLM has some management activities specific to mountain plover; increased coordinated management activities in Montana are needed. However, the unifying habitat features desirable to mountain plovers are extremely short vegetation, a high percentage of bare soil, and an extensive area (0.3 to 0.6 miles in diameter) of nearly level terrain (Knowles and Knowles 1997). Management practices should emulate these parameters to ensure that these populations persist. Several studies have suggested specific conservation actions that could be taken to benefit mountain plover habitat (Wershler 1989; FaunaWest Wildlife Consultants 1991; Knopf 1991; Carter and Barker 1993; USFWS 1995; Dinsmore 2001).

Management Plans

Brown, S., C. Hickey, B. Harrington, and R. Gill, eds. 2001. The U.S. Shorebird Conservation Plan, 2nd ed. Manomet Center for Conservation Sciences, Manomet, Massachusetts.

Casey, D. 2000. Partners in Flight Bird Conservation Plan Montana. 279 pp.

Mountain Plover Current Impacts, Future Threats, and Conservation Actions

Current Impacts	Future Threats	Conservation Actions
Decrease of total acreage of prairie dog habitat on suitable substrate selected by mountain plovers	Decrease of total acreage of prairie dog habitat on suitable substrate selected by mountain plovers	Continued management and potential enhancement to prairie dog colonies Use plague vaccine, if proven effective, on prairie dog towns most likely to be used by mountain plovers
Habitat loss of short-grass prairies due to conversion to cropland	Habitat loss of short-grass prairies due to conversion to cropland	Promote conservation of intact grassland landscapes through incentives and easements Protect grasslands that are at highest risk of conversion to cropland through the use of easements and where possible fee acquisition Provide incentives to maintain grazed grasslands over conversion to croplands

Current Impacts	Future Threats	Conservation Actions
		Work with landowners and land management agencies to limit activities that may be detrimental to this species
Invasive plant species	Invasive plant species	Apply appropriate range management practices to reduce presence and spread of noxious and invasive plant species Shrub and noxious weed encroachment should be controlled at known and potential breeding sites
Lack of grazing to create favorable structure	Lack of grazing to create favorable structure	Work with landowners and land management agencies to ensure species needs are adequately addressed in grazing and RMPs

Additional Citations

Carter, M. F., and K. Barker. 1993. An interactive database for setting conservation priorities for western neotropical migrants. USDA Forest Service General Technical Report RM-229: 120–144.

Dinsmore, S. J. 2001. Population Biology of Mountain Plovers in Southern Valley County, Montana. Dissertation, Colorado State University. 109 pp.

FaunaWest. 1991. Status and breeding distribution of the mountain plover in Montana. Bureau of Land Management, Billings. 61 pp.

Knopf, F. L. 1991. Status and conservation of mountain plovers: the evolving regional effort. Report of research activities, US Fish and Wildlife Service National Ecology Research Center, Fort Collins, Colorado, 9 pp.

Knowles, C. J., and P. R. Knowles. 1993. Mountain plover numbers, reproduction, and habitat use in three areas of Montana. Unpublished report for the Bureau of Land Management, Billings, Montana. 50 pp.

Knowles, C., and P. R. Knowles. 1997. Mountain Plover Numbers, Reproduction, and Habitat Use in Montana: A Summary of Six Survey Years. FaunaWest Wildlife Consultants. Prepared for the Montana Department of Fish, Wildlife & Parks, Great Falls, Montana, and the Bureau of Land Management, Billings, Montana. April, 22, 1997.

Knowles, C., P. R. Knowles, M. Maj, and D. Hinckley. 1995. Mountain Plover Numbers, Reproduction, and Habitat Use in Three Areas of Montana. Prepared by FaunaWest Wildlife Consultants for Bureau of Land Management, Billings, Montana.

Knowles, C. J., C. J. Stoner, and S. P. Gieb. 1982. Selective use of black-tailed prairie dog towns by mountain plovers. Condor 84:71–74.

Olson, S. L. 1985. Mountain plover food items on and adjacent to a prairie dog town. Prairie Naturalist 17(2):83–90.

Olson-Edge, S. L., and W. D. Edge. 1987. Density and distribution of the mountain plover on the Charles M. Russell National Wildlife Refuge. The Prairie Naturalist 19(4):233–238.

U.S. Fish and Wildlife Service, Office of Migratory Bird Management. 1995. Migratory nongame birds of management concern in the United States: the 1995 list. U.S. Government Printing Office:1996-404-911/44014. 22 pp.

Wershler, C. R. 1989. A management strategy for mountain plovers in Alberta. Proc. Prairie Cons. Endangered Species Workshop, Saskatchewan Natural History Society and Canadian Plains Resource Center. 5 pp.

Piping Plover (*Charadrius melodus*)

State Rank: S2B
Global Rank: G3

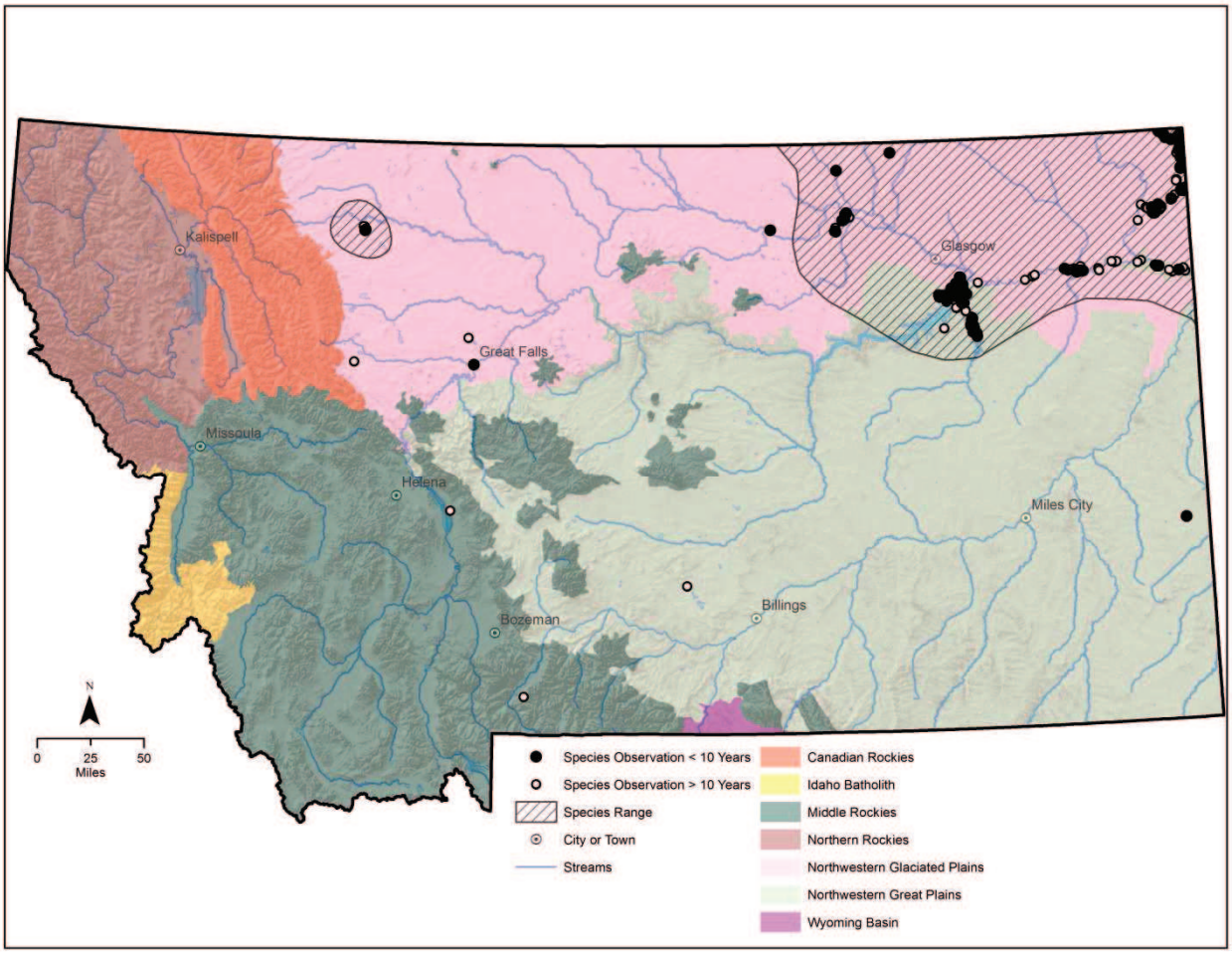

Figure 37. Montana range and observations of the piping plover

Habitat

Piping plovers primarily select unvegetated sand or pebble beaches on shorelines or islands in freshwater and saline wetlands. Vegetation, if present at all, consists of sparse, scattered clumps (Casey 2000). Open shorelines and sandbars of rivers and large reservoirs in the eastern and north-central portions of the state provide prime breeding habitat (FWP 2013). In Montana and throughout the species' range, nesting may occur on a variety of habitat types. If conditions are right, alkali wetlands, lakes, reservoirs, and rivers can all provide the essential features required for nesting. The alkali wetlands and lakes found in the northeastern corner of the state generally contain wide, unvegetated, gravelly, salt-encrusted beaches. Rivers that flood adequately can supply open sandbars or gravelly beaches, as can large reservoirs, with their shoreline beaches, peninsulas, and islands of gravel or sand (USFWS 2013).

Sites with gravel substrate provide the most suitable sites for nesting (MPPRC 1994). One of the most limiting factors to nesting site selection is vegetation encroachment; piping plovers avoid areas where vegetation provides cover for potential predators. Fine-textured soils are easier to treat mechanically than rocky or gravelly soils when vegetation is determined as a limiting factor

in an area's ability to provide suitable nesting habitat, but fine soils are not typically a preferred nesting substrate (MPPRC 1994). Another, and more important, limiting factor in nest site selection is the location of nesting sites in relation to surrounding water levels. Nests are often inundated because water levels are kept unnaturally high throughout the breeding season (and high winds can cause nests to be flooded), or nesting sites are not available, either because of encroaching vegetation or because water levels are so high that beaches are underwater during the early part of, and possibly throughout, the nesting season (MPPRC 1994). Nests are simple scrapes dug into the nest substrate, which may or may not be lined with pebbles (MPPRC 1994, 1995; Haig 1992).

Management

Four specific geographic areas recognized as providing critically important habitat and identified as essential for the conservation of the species have been designated as "Critical Habitat Units" in Montana by USFWS. The designation of critical habitat may require federal agencies to develop special management actions affecting these sites. The 4 units include prairie alkali wetlands and surrounding shoreline; river channels and associated sandbars and islands; and reservoirs and inland lakes with associated shorelines, peninsulas, and islands (USFWS 2013). Piping plovers rely on these places for courtship, nesting, foraging, and brood rearing. The first, Unit 1, contains alkali lake and wetland habitat found in Sheridan County. Unit 2 is identified as riverine habitat and includes the Missouri River just south of Wolf Point to the state line, encompassing habitat provided by the sparsely vegetated sandbars and sandy or gravelly beaches along this stretch of the river. Reservoirs, which include similar sandbars and sandy or gravelly beach habitat, define both Units 3 and 4. Unit 3 includes Fort Peck Reservoir, from south of the dam to and including approximately 26 miles (north to south distance) of the length of Dry Arm. Portions of the Bowdoin National Wildlife Refuge, the majority of Lake Bowdoin, and the western portion of Dry Lake, were designated as Unit 4. Piping plovers nest at Nelson Reservoir north of the Bowdoin National Wildlife Refuge, but are not contained within any of the Critical Habitat Units in the state. This reservoir was excluded from the critical habitat designation because of a Memorandum of Understanding between the BOR, USFWS, and the local irrigation districts. The Memorandum, in combination with a biological opinion from the USFWS, guides management actions at this location (USFWS 2013).

The 2011 international piping plover breeding census detected roughly half of the plovers detected in previous censuses. Censuses are conducted every 5 years. Significant flooding throughout the nesting range of the plover in this year likely limited nesting and survey detectability.

An interagency team, to include FWP, began revision of the 1988 recovery plan in 2010 and it is still being developed. FWP management of piping plovers is also guided by the 2006 species management plan that has goal of 60 breeding pairs over a 10 year running average, distributed across appropriate habitats in Montana. A workshop was held in 2011 to discuss current population status and trend of the great plains population and new population monitoring and estimation techniques.

Management Plans
Atkinson, S. J. and A. R. Dood. 2006. Montana Piping Plover Management Plan. Montana Department of Fish, Wildlife & Parks, Bozeman, Montana. 78 pp.

Brown, S., C. Hickey, B. Harrington, and R. Gill, eds. 2001. The U.S. Shorebird Conservation Plan, 2nd ed. Manomet Center for Conservation Sciences, Manomet, Massachusetts.

Casey, D. 2000. Partners in Flight Bird Conservation Plan Montana. 279 pp.

Haig, S., et al. 1988. Recovery plan for piping plovers (*Charadrius melodus*) of the Great Lakes and northern Great Plains. U.S. Fish and Wildlife Service. 160 pp.

Haig, S., et al. 1994. Revised recovery plan for piping plovers (*Charadrius melodus*) breeding on the Great Lakes and northern Great Plains. Technical/agency review draft. Great Lakes/Northern Great Plains Piping Plover Recovery Team. 121 pp.

Piping Plover Current Impacts, Future Threats, and Conservation Actions

Current Impacts	Future Threats	Conservation Actions
Flooding Water flow and river dynamics	Flooding Water flow and river dynamics	Encourage management of water flows that restore riverine habitats and their associated ecosystem processes
Food availability	Food availability	Investigate forage availability
Human disturbance	Human disturbance	Consider limiting access and certain types of activities when known to be disturbing to nest sites
Increased predator abundance	Increased predator abundance	Continued site specific use of predator management deterrent and control measures Control gull populations in close proximity to plover breeding locations by eliminating nesting habitat for gulls (install structures avoided by gulls) Remove human created structures utilized by predators (e.g. abandoned buildings)

Current Impacts	Future Threats	Conservation Actions
Land use change: Conversion of uplands to cropland Wetland loss and modification	Land use change: Conversion of uplands to cropland Wetland loss and modification	Manage vegetation encroachment and substrate to increase nest site availability Protect habitat that is at highest risk of conversion to cropland through the possible use of easements and acquisition Work with landowners and land management agencies to limit activities that may be detrimental to this species
Nesting and reproductive success	Nesting and reproductive success	Continue annual monitoring of plovers coupled with efforts to standardize monitoring and data collection techniques within and between states/provinces in the Northern Great Plains
Pollution and environmental contaminants	Pollution and environmental contaminants	Work with watershed groups, agencies, organizations, and the public to identify and reduce point source pollution in headwater streams
Poor grazing practices	Poor grazing practices	Provide assistance to private landowners interested in implementing voluntary conservation measures that improve wetland habitat and limit livestock disturbance Work with landowners and land management agencies to ensure species needs are adequately addressed in grazing and RMPs

Additional Citations

Casey, D. 2000. Partners in Flight Bird Conservation Plan Montana. 279 pp.

Haig, S. M. 1992. Distribution and status of piping plovers in winter. Abstract, 6th Annual Meeting of the Society for Conservation Biology, pp. 69.

Montana Department of Fish, Wildlife & Parks. 2013. http://fwp.mt.gov/fishAndWildlife/species/threatened/pipingPlover/default.html

Montana Piping Plover Recovery Committee. 1994. 1993 surveys for piping plover (*Charadrius melodus*) and least tern (*Sterna antillarum*) in Montana. Unpublished report. 116 pp. plus appendices.

Montana Piping Plover Recovery Committee. 1995. 1994 surveys for piping plover (*Charadrius melodus*) and least tern (*Sterna antillarum*) in Montana. 117 pp. + appendices.

U.S. Fish and Wildlife Service. 2013. http://www.fws.gov/plover/facts.html

Sharp-tailed Grouse (*Tympanuchus phasianellus*)

State Rank: S1, S4
Global Rank: G5

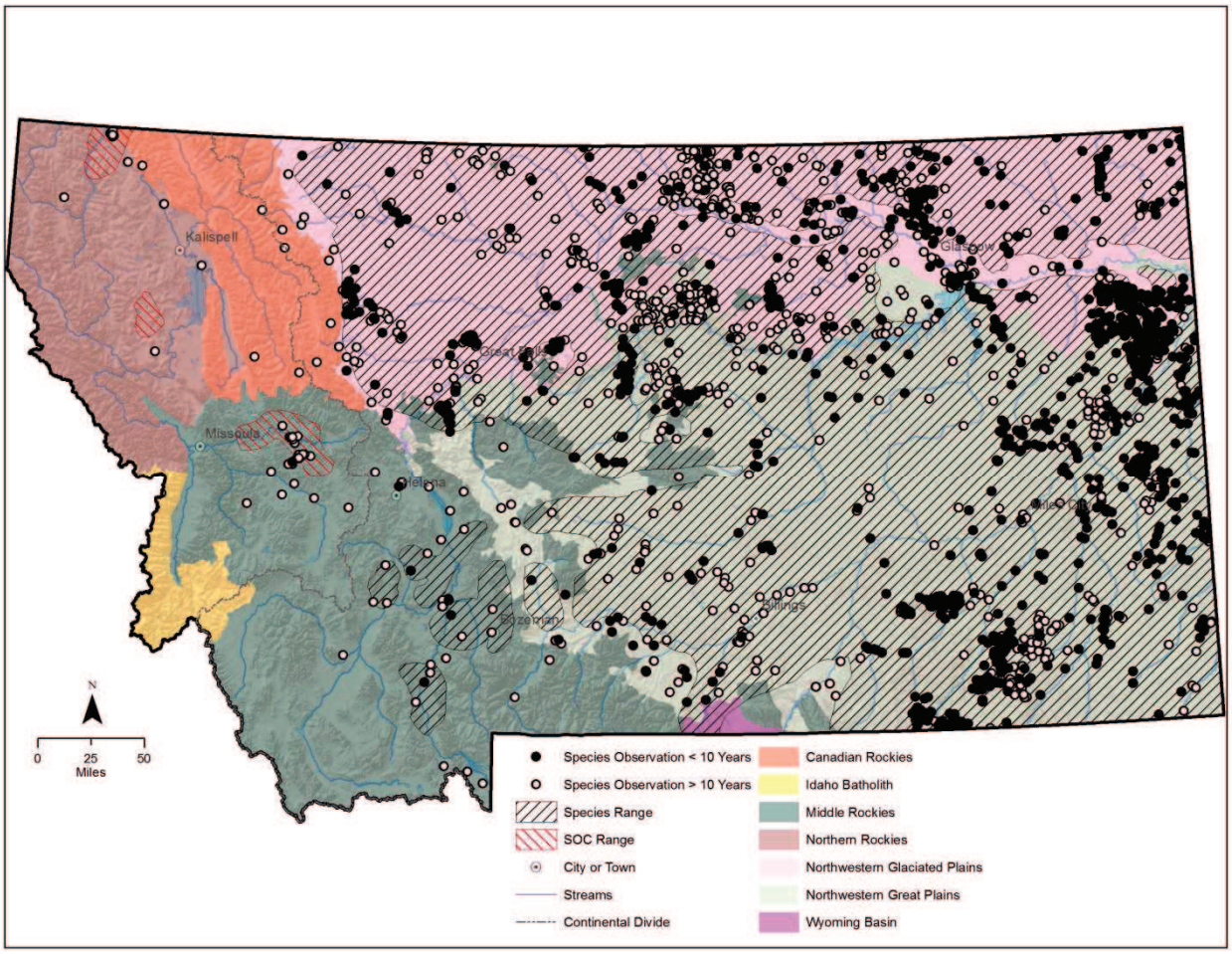

Figure 38. Montana range and observations of the sharp-tailed grouse

Habitat

The habitat is primarily grasslands interspersed with shrub and brush-filled coulees. They prefer stands of inter-mixed tree and shrub grasslands. With high population, they spread into islands of native grassland, usually along drainages surrounded by grain fields. Sharp-tailed grouse persist only on native bunchgrass-shrub stands. In Idaho, Saab and Marks (1992) found birds selected big sage habitat types during summer. They appeared to prefer range habitats that were in good condition.

Until recently, sharp-tailed grouse in Montana were found west of the Continental Divide in larger mountain valleys with extensive native bunchgrass-shrub stands. However, they have now apparently been extirpated, or nearly extirpated, from this historic range (Hoffman and Thomas 2007).

Management

Only populations west of the Continental Divide are a SGCN with a state rank of S1. Populations east of the Continental Divide have a state rank of S4 and are not a SGCN.

Careful population counts must be made, as well as counts of nesting sites and breeding success. Counting individuals at leks is the easiest way to monitor population trends. Wildlife agencies monitor leks because their size and density provide an index to populations and indirectly reflect changes in habitat quality (Cannon and Knopf 1981; Giesen and Connelly 1993).

Management Plans

Casey, D. 2000. Partners in Flight Bird Conservation Plan Montana. 279 pp.

Wood, M. 1991. Management plan for Columbian sharp-tailed grouse in western Montana.

Sharp-tailed Grouse Current Impacts, Future Threats, and Conservation Actions

Current Impacts	Future Threats	Conservation Actions
Conversion of native grassland and shrub/grass communities to agriculture and other unsuitable land uses	Conversion of native grassland and shrub/grass communities to agriculture and other unsuitable land uses	Coordinate with British Columbia to manage suitable habitat along the international Kootenai River valley Protect habitat that is at highest risk of conversion to cropland through the possible use of easements acquisition Provide incentives to maintain grazed grasslands over conversion to croplands Work with landowners and land management agencies to limit activities that may be detrimental to this species
Encroachment of conifers onto grassland habitat	Encroachment of conifers onto grassland habitat	Use prescribed fire to stimulate growth and vigor of deciduous shrubs in wintering areas, as long as a minimum of 10% of habitat will provide shrub cover during the recovery period of the burned area
Human disturbance to leks	Human disturbance to leks	Avoid pesticide use on sharp-tailed grouse habitats Prohibit physical, mechanical, and audible disturbances within the breeding complex during the breeding season (March to June), if they might impact courtship activities and breeding during the daily display period (within 3 hours of sunrise and sunset)

Current Impacts	Future Threats	Conservation Actions
		Protect known lek areas and surrounding habitats within 1.2 miles, and search for new leks in areas with appropriate physiographic and vegetative characteristics
Invasive plant species	Invasive plant species	Apply appropriate range management practices to reduce presence and spread of noxious and invasive plant species Avoid manipulation or alteration of vegetation within the breeding complex (lek and nesting areas) during the nesting period (mid-April to June)
Isolated and extremely small population	Isolated and extremely small population	Evaluate potential for sharp-tailed grouse reintroduction Identify habitat connectivity across the Continental Divide to eastern Montana populations, and enhance/conserve grassland habitats to increase or maintain connectivity Increase abundance and distribution of sharp-tailed grouse with reintroduction program into western Montana Monitor existing SGCN populations to determine if management actions are adequate
Predation on nests by ravens and other predators	Predation on nests by ravens and other predators	Protect, maintain, and enhance winter, breeding, and nesting habitats near known populations
Poor grazing practices	Poor grazing practices	Develop livestock management plans, which favor maintenance or enhancement of bunchgrass communities, forbs species diversity, and upland shrubs Work with landowners and land management agencies to ensure species needs are adequately addressed in grazing and RMPs

Additional Citations

Cannon, R. W., and F. L. Knopf. 1981. Lek numbers as a trend index to prairie grouse populations. Journal of Wildlife Management 45:776–778.

Giesen, K. M., and J. W. Connelly. 1993. Guidelines for management of sharp-tailed grouse habitats. Wildlife Society Bulletin. 21:325–333.

Hoffman, R. W. and A. E. Thomas. 2007. Columbian Sharp-tailed Grouse (*Tympanuchus phasianellus columbianus*): a technical conservation assessment. USDA Forest Service. Rocky Mountain Region. Available: http://www.fs.fed.us/r2/projects/scp/assessments/columbiansharptailedgrouse.pdf

Saab, V. A., and J. S. Marks. 1992. Summer habitat use by Columbian sharp-tailed grouse in western Idaho. Great Basin Naturalist. 52:166–173.

Whooping Crane (*Grus americana*)

State Rank: S1M
Global Rank: G1

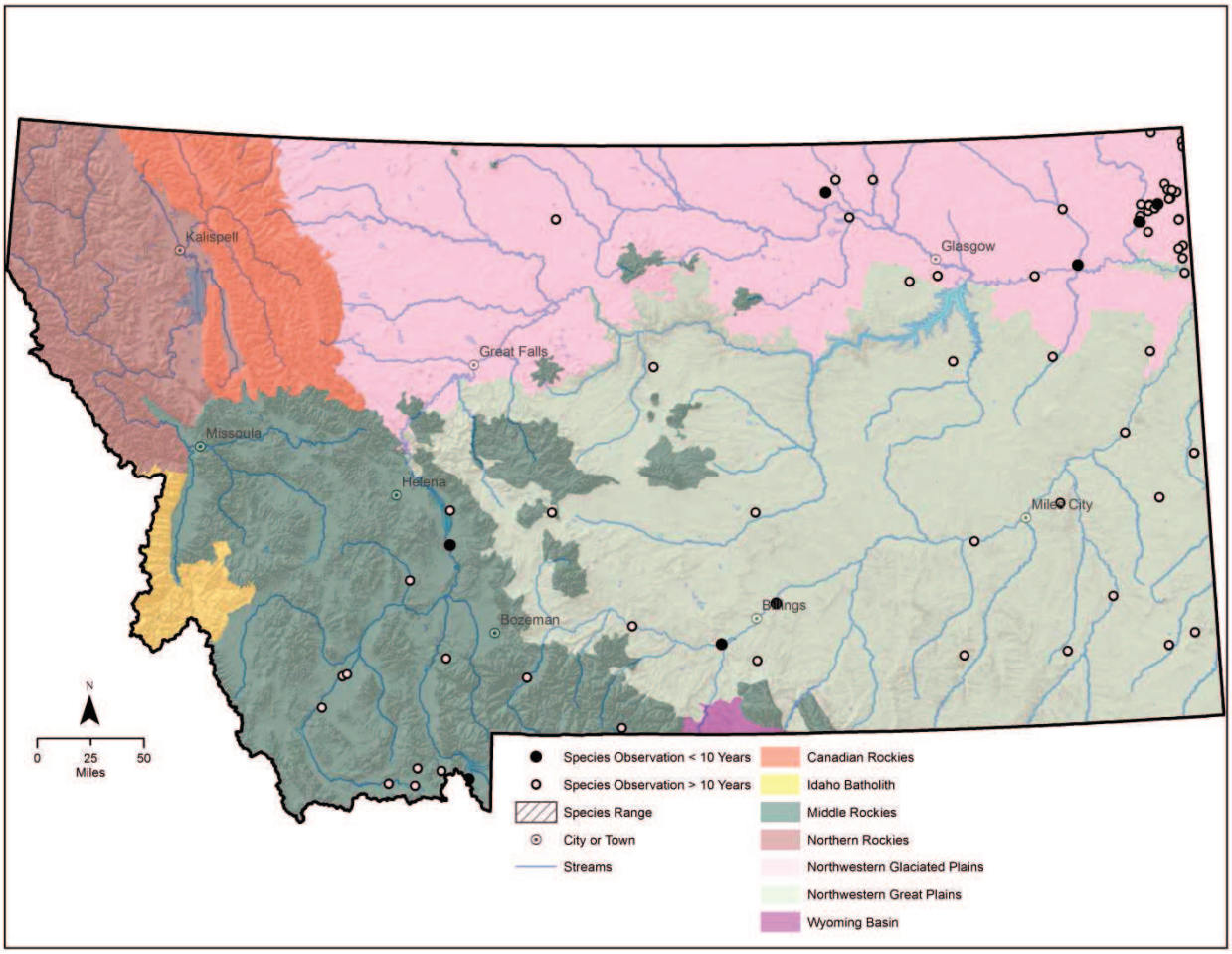

Figure 39. Montana observations of the whooping crane

Habitat

The whooping crane has been observed at or within the marsh habitat present at Medicine Lake National Wildlife Refuge and Red Rock Lakes National Wildlife Refuge. Observations of individual birds in other areas of the state include grain and stubble fields as well as wet meadows, wet prairie habitat, and freshwater marshes that are usually shallow and broad with safe roosting sites and nearby foraging opportunities.

Management

Efforts continue to protect and restore wetlands in the northeastern corner of Montana, in the area where whooping cranes have migrated in the past. There are also continued efforts to educate crane and waterfowl hunters on the identification of whooping cranes in an effort to avoid accidental harvest.

Management Plans
Kushlan, J. A., M. J. Steinkamp, K. C. Parsons, J. Capp, M. A. Cruz, M. Coulter, I. Davidson, L. Dickson, N. Edelson, R. Elliot, R. M. Erwin, S. Hatch, S. Kress, R. Milko, S. Miller, K. Mills, R. Paul, R. Phillips, J. E. Saliva, B. Sydeman, J. Trapp, J. Wheeler, and K. Wohl. 2002. Waterbird Conservation for the Americas: The North American Waterbird Conservation Plan, Version 1. Waterbird Conservation for the Americas, Washington, DC. 78 pp.

Olsen, D. L. 1980. Whooping Crane Recovery Plan. Whooping Crane Recovery Team. 206 pp.

Whooping Crane Current Impacts, Future Threats, and Conservation Actions

Current Impacts	Future Threats	Conservation Actions
Collisions with powerlines	Collisions with powerlines Collision with turbine blades	Conduct preconstruction evaluations and/or surveys to identify wetlands that provide potentially suitable stopover habitat Do not site turbines, transmission lines, access roads, or other project facilities within or adjacent to wetlands that provide suitable stopover habitat (U.S. Department of Energy Western Area Power Administration and USFWS 2013)
Habitat degradation and fragmentation of native prairies and wetlands	Habitat degradation and fragmentation of native prairies and wetlands	Identify migration stopover habitat and work to conserve grasslands and wetlands in those areas Work with landowners to conserve native prairies in northwestern Montana
Human misidentification as sandhill cranes during hunting season	Human misidentification as sandhill cranes during hunting season	Hunter education

Additional Citations
U.S. Department of Energy Western Area Power Administration and U.S. Fish and Wildlife Service. 2013. Upper Great Plains Wind Energy Programmatic Environmental Impact Statement DRAFT. 938 pp.